DRDC Toronto CR 2011-182

# CAPABILITY CHALLENGES IN THE HUMAN DOMAIN FOR INTELLIGENCE ANALYSIS: REPORT ON COMMUNITY-WIDE DISCUSSIONS WITH CANADIAN INTELLIGENCE PROFESSIONALS

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**Building on an earlier small-sample interview study (Derbentseva, McLellan, & Mandel, 2011) this report describes the findings of a focus group study with members of the Canadian intelligence community. The present study had both a larger and more diverse sample of intelligence practitioners than the earlier study. Four focus group discussions were conducted to explore human capability challenges within the broader Canadian community. The study also explored how behavioural science research might help the intelligence community deal with the identified challenges. Results showed a wide range of issues and challenges identified within the focus groups. Issues such as coordination and information sharing within the community professionalization and the need for better career paths emerged as important challenges. Educating consumers about intelligence analysis, clarifying the relationship between consumers and producers of analytic products and research related to the tools, techniques and the practice of intelligence also received considerable attention. Overall, this study documents an expanded set of issues and challenges facing intelligence personnel, strong evidence of the potential contribution that future research can make to alleviating current challenges within the intelligence community, and a detailed list of potential research opportunities for behavioural science research (and other types of research) to support intelligence capability.**

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# Abstract

Building on an earlier small-sample interview study (Derbentseva, McLellan, & Mandel, 2011), this report describes the findings of a focus group study with members of the Canadian intelligence community. The present study had both a larger and more diverse sample of intelligence practitioners than the earlier study. Four focus group discussions were conducted to explore human capability challenges within the broader Canadian community. The study also explored how behavioural science research might help the intelligence community deal with the identified challenges. Results showed a wide range of issues and challenges identified within the focus groups. Issues such as coordination and information sharing within the community, professionalization and the need for better career paths emerged as important challenges. Educating consumers about intelligence analysis, clarifying the relationship between consumers and producers of analytic products and research related to the tools, techniques and the practice of intelligence also received considerable attention. Overall, this study documents an expanded set of issues and challenges facing intelligence personnel, strong evidence of the potential contribution that future research can make to alleviating current challenges within the intelligence community, and a detailed list of potential research opportunities for behavioural science research (and other types of research) to support intelligence capability.

# Résumé

Fondé sur une étude antérieure d'un petit échantillonnage d'entrevues (Derbentseva, McLellan & Mandel, 2011), le présent compte rendu décrit les résultats obtenus d'une étude menée par un groupe de consultation avec des membres de la collectivité canadienne du renseignement. Cette étude renferme un échantillonnage plus important et plus varié de praticiens du renseignement que l'étude précédente. Quatre groupes de consultation ont discuté des problèmes de capacité humaine au sein de la collectivité canadienne dans son ensemble. L'étude a également analysé de quelle façon la recherche en science du comportement peut aider la collectivité du renseignement à aborder les problèmes identifiés. Les résultats ont montré une vaste gamme d'enjeux et de problèmes identifiés par les groupes de consultation. Des questions comme la coordination et le partage de l'information au sein de la collectivité, la professionnalisation et le besoin de meilleurs parcours professionnels sont apparues importantes. L'éducation des consommateurs sur l'analyse du renseignement, la clarification des rapports entre les consommateurs et les producteurs de produits analytiques ainsi que la recherche associée aux outils, aux techniques et à la pratique du renseignement ont également fait l'objet d'une attention particulière. Dans l'ensemble, cette étude porte sur un vaste ensemble d'enjeux et de problèmes auxquels le personnel du renseignement est confronté, sur une preuve solide de la contribution éventuelle que peut apporter la recherche future pour amoindrir les problèmes actuels au sein de la collectivité du renseignement et sur une liste détaillée des possibilités de recherche en science du comportement (et autres types de recherche) à l'appui de la capacité du renseignement.

# Executive Summary

## Capability Challenges in the Human Domain for Intelligence Analysis: Report on Community-Wide Discussions with Canadian Intelligence Professionals

**Barbara D. Adams; Michael H. Thomson; Human*systems* Incorporated; Natalia Derbentseva; David R. Mandel; DRDC Toronto CR2011-182; Defence R&D Canada Toronto; March 2012**

**Background –** Intelligence plays a vital role in defence and security. It is important for the intelligence community to take stock of its capability challenges in various domains and to find ways to adapt to meet new challenges.The present study was aimed at identifying human capability challenges in the Canadian intelligence community, with a particular view toward identifying how behavioural science might help to respond effectively to these challenges. To this end, four focus groups were conducted with members of the Canadian intelligence community. This research builds on an earlier small-scale interview study with managers of intelligence analysts (Derbentseva, McLellan, & Mandel, 2011). The present study not only includes a larger sample, it also includes representation from a much wider range of organizations and roles (e.g., analysts, managers, and trainers) from the community.

**Method -** Twenty-three subject matter experts from eight organizations within the intelligence community (CBSA, CFSMI, CSIS, CDI, ITAC, PCO, PSC, and RCMP) participated in one of four focus groups. This research was conducted in two phases. Phase 1adopted a "brainstorming" approach in which participants identified topics and issues that they perceived as being of significant concern. The results of this elicitation process were then summarized in ten broad categories and related subtopics and issues. In Phase 2, focus groups validated and expanded the set of issues identified during the Phase 1. Participants in both phases also rated the potential value of research exploring each the issues generated during discussion.

**Results–**A wide range of issues and challenges were identified by participants, including understanding the analyst's motivation; improving recruitment practices; developing processes and tools for evaluation of intelligence processes and products; educating consumers about the intelligence process and products; improving communication of intelligence through improving the communication of uncertainty and development of information visualization techniques; documenting existing tools and practices and evaluating their effectiveness; promoting collegial collaboration through informal networking; understanding the role of mentoring and its impact on intelligence personnel; the lack of coordination and information sharing within the community; the need for community-wide coordination of joint efforts and an analyst secondment programme; the need for professionalization of intelligence analysis; and the need to expand career paths available to analysts. Overall, issues at the community-wide level received greatest attention during the discussions.

**Significance–**The study documents a wide range of human capability challenges in the intelligence domain. The information garnered from this study could profitably be used by both scientific organizations, such as DRDC, and defence and security organizations, such as those from which the participants were drawn, to chart a roadmap for science and technology in support of the

intelligence community. In particular, the results of this study could inform efforts to develop a vision for how DRDC might contribute to intelligence capability now and into the future.

**Future Research**–A detailed list of potential research opportunities was identified and feedback was also elicited from participants to inform a survey to be undertaken with a broad cross-section of organizations within the Canadian intelligence community in the 2012-13 fiscal year. This survey will further examine the human challenges in intelligence production in order to help set priorities for behavioural science research undertaken by DRDC Toronto and possibly other DRDC centres.

# Sommaire

## Capability Challenges in the Human Domain for Intelligence Analysis: Report on Community-Wide Discussions with Canadian Intelligence Professionals

**Barbara D. Adams; Michael H. Thomson; Human*systems* Incorporated; Natalia Derbentseva; David R. Mandel; DRDC Toronto CR2011-182; Defence R&D Canada Toronto; December 2011**

**Contexte –** Le renseignement joue un rôle essentiel en matière de défense et de sécurité. Il est important que la collectivité du renseignement répertorie les problèmes de sa capacité dans divers domaines et trouve des moyens de s'adapter afin de satisfaire aux nouveaux enjeux. La présente étude visait à identifier les problèmes de capacité humaine au sein de la collectivité canadienne du renseignement, tout en portant une attention particulière à la façon dont la science du comportement peut aider à régler efficacement ces problèmes. À cette fin, quatre groupes de consultation ont discuté avec des membres de la collectivité canadienne du renseignement. Cette recherche repose sur une étude antérieure d'un petit échantillonnage d'entrevues avec des gestionnaires d'analystes du renseignement (Derbentseva, McLellan, & Mandel, 2011). Non seulement la présente étude renferme un échantillonnage plus important, mais elle contient aussi la représentation d'une plus vaste gamme d'organisations et de rôles (p. ex., analystes, gestionnaires, formateurs) de la collectivité.

**Méthode –** Vingt-trois spécialistes en la matière, issus de huit organisations de la collectivité du renseignement (ASFC, ERMFC, SCRS, CRD, CCTI, BPC, SPC et GRC), ont participé à l'un des quatre groupes de consultation. La recherche s'est déroulée en deux étapes. Lors de la première étape, on a adopté une approche dite de « remue-méninges » au cours de laquelle les participants ont identifié des sujets et des questions qu'ils estimaient importants. Les résultats de ce processus de définition ont ensuite été résumés à l'intérieur de dix catégories ainsi que de sous-sujets et de questions connexes. Au cours de la deuxième étape, les groupes de consultation ont validé et élargi l'ensemble des questions identifiées lors de la première étape. Les participants des deux étapes ont également évalué la valeur potentielle de la recherche en examinant chacune des questions relevées lors des discussions.

**Résultats –** Une vaste gamme d'enjeux et de problèmes ont été identifiés par les participants, y compris la compréhension de la motivation des analystes, l'amélioration des pratiques de recrutement, l'élaboration de processus et d'outils d'évaluation des processus et des produits associés au renseignement, l'éducation des consommateurs sur les processus et les produits associés au renseignement, l'amélioration de la transmission du renseignement par l'entremise de la transmission de l'incertitude et l'élaboration de techniques de visualisation du renseignement, la documentation de pratiques et d'outils existants et l'évaluation de leur efficacité, la promotion d'une collaboration collégiale par l'entremise d'un réseautage informel, la compréhension du mentorat et de son incidence sur le personnel du renseignement, le manque de coordination et de partage de l'information au sein de la collectivité, le besoin d'une coordination des efforts conjoints à l'échelle de la collectivité et d'un programme d'affectation d'analystes, le besoin de professionnalisation de l'analyse du renseignement et la nécessité d'élargir les parcours

professionnels disponibles pour les analystes. Dans l'ensemble, les sujets à l'échelle de la collectivité ont reçu une attention hautement particulière lors des discussions.

**Portée –**L'étude aborde une vaste gamme de problèmes de capacité humaine dans le domaine du renseignement. L'information tirée de cette étude peut être utilisée à profit par les deux organismes scientifiques, comme RDDC et les organisations chargées de la sécurité et de la défense, comme celles d'où proviennent les participants pour élaborer une carte de science et de technologie à l'appui de la collectivité du renseignement. De façon particulière, les résultats de cette étude peuvent servir aux efforts d'élaboration d'une vision sur la façon dont RDDC peut contribuer à la capacité du renseignement, maintenant et dans le futur.

**Recherches futures –**Une liste détaillée de possibilités de recherche a été dressée et des commentaires ont été définis par les participants pour permettre la tenue d'une enquête auprès d'un échantillonnage représentatif d'organisations de la collectivité canadienne du renseignement au cours de l'AF 2012-2013. Cette enquête examinera plus en profondeur les problèmes humains dans la production du renseignement afin d'aider à établir des priorités pour la recherche en science du comportement entreprise par RDDC Toronto et possiblement par d'autres centres de RDDC.

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# 1. Introduction

## 1.1 Background

Governments operate in a dynamic environment, and to ensure their survival and successful functioning, they need to have an adequate response system to changes and threats in the environment. Two of the several key elements of such a response system are the awareness of current events and the means of anticipating future developments, both of which are supplied to the government by its intelligence organizations. Although intelligence is often left behind the scenes, it plays a pivotal role in state decision making and policy development (Davis, 2006). Only when something goes terribly wrong, as with the September 11, 2001, attacks on the United States or misjudgement of the Iraqi weapons of mass destruction program, the intelligence (or its failure) comes into the forefront(Bruce & George, 2008). Investigations into the reasons for these failures had been conducted by Canada's allies (e.g., Butler, Chilcot, Inge, Mates, & Taylor, 2004; 9/11 Commission, 2004), and the intelligence community, in general, received greater attention from the scholarly community as (e.g., Campbell & Mandel, 2010; Fischhoff & Chauvin, 2011; George & Bruce, 2008; Lefebvre, 2004; NRC Report, 2011). Clearly, these investigations aim to provide support to the intelligence community, to ensure the effectiveness of the intelligence function, and to prevent future intelligence failings.

To achieve these ambitious goals, it is critical to isolate the challenges that the intelligence community is facing and to identify means of addressing them. Although more and more tools and systems have been developed over the years to assist intelligence analysts in their work, the key element and the heart of the intelligence production remains the human. The human component of intelligence production encompasses many aspects, including thinking and reasoning of individual analysts, the organization and tasking of intelligence institutions, the relationship between intelligence consumer and intelligence producer including communication and knowledge transfer between them, and relationships among different organizations in the intelligence community. Therefore, the emphasis on understanding *human* capability challenges in intelligence production is necessary.

As indicated above, the interest in the issues of intelligence production has been growing, and more scholarly work has been undertaken on the subject in the recent years. The majority of this work has been conducted in the U.S. and the U.K. and has emphasized issues within these intelligence communities. However, the Canadian intelligence community has not received as much attention and there is very little open literature available dedicated to the issues and concerns pertinent to the Canadian community.

The study presented in this report focuses on the Canadian intelligence community with the goal of identifying human capability challenges relevant to the Canadian context. The present study is an extension of an earlier interview study conducted by the DRDC research team (Derbentseva, McLellan, & Mandel, 2011). In 2008, the DRDC research team interviewed managers of

intelligence analysts from two organizations, including the Chief of Defence Intelligence (CDI) and the International Assessment Staff (IAS)[1] of Privy Council Office (PCO). These interviews focused on the challenges in intelligence production, however the sample in the initial interview study was fairly constrained. Although there are many similarities, there are also serious differences in emphasis and role of intelligence analysts and managers working within the diverse Canadian intelligence community. The present study addresses this issue by including a larger sample of intelligence professionals in order to capture the experiences of personnel in the Canadian intelligence community from a broader set of organizations.

The focus groups described in this report were aimed at identifying the issues and challenges facing personnel working within the intelligence community, with a view toward identifying how behavioural science research might help to alleviate these challenges. Feedback was also elicited from participants to inform a survey to be undertaken with a broad cross-section of organizations within the Canadian intelligence community in the 2012-13 fiscal year. This survey will further examine the human challenges in intelligence in order to help set priorities for behavioural science research undertaken by DRDC Toronto and possibly other DRDC centres.

The report is organized in the following manner: The next section, section 2, describes the methodology used to conduct the study; section 3 reports the results of quantitative assessments and the summary of the discussions; and section 4 provides research implications and conclusions.

[1] Note that IAS has reverted to the name Intelligence Assessment Secretariat.

# 2. Method

## 2.1 Participants

Participants for this study were identified by personnel within the intelligence community and the professional contact networks of the DRDC Toronto authors of this report. The DRDC Toronto authors sent an invitation by email to the prospective participants, requesting their voluntary participation in the present study. The letter stated that DRDC Toronto is conducting a multi-year research project that aims to apply behavioural science research to support the analytic function in intelligence. The proposed study sought to extend an initial, small-sample interview study of human capability challenges in the intelligence domain to a wider sample from the Canadian intelligence community. The letter further explained that the research team planned to distribute a survey to intelligence analysts and managers of analysts across the intelligence community, but that as a preliminary step, the research team would like to solicit input from analysts, managers, and educators in the intelligence community regarding potential areas of investigation for the study. Thus, the letter explained, the research team was now organizing a series of half-day focus groups that would bring together members of the Canadian intelligence community from a range of organizations to discuss human capability issues in intelligence analysis and to chart a way ahead for the proposed survey study, and that they were invited to participate in that discussion.

Twenty-three subject matter experts from various organizations within the intelligence community participated in one of four focus groups. Participants represented a range of roles including intelligence analysts ($n$ = 6) managers ($n$ = 9), and trainers ($n$ = 4). The remainder of participants indicated that they held other roles within the intelligence community that did not fall into the previous categories ($n$ = 4). Participants represented eight different organizations including the Canadian Border Services Agency (CBSA), Canadian Forces School of Military Intelligence (CFSMI), Canadian Security Intelligence Service (CSIS), Chief of Defence Intelligence (CDI), Integrated Terrorism Assessment Centre (ITAC), Privy Council Office (PCO), Public Safety Canada (PSC), and the Royal Canadian Mounted Police (RCMP).

## 2.2 Procedure

Each focus group session began with an introduction to the research team, followed by a briefing that informed participants of the purposes of the study, its relevance and potential benefit to the intelligence community as a whole. Each member of the focus group was asked to provide a brief introduction to the group, following which the hosts clearly outlined the purposes of the session. Each focus group was conducted over a 4-hour period in a roundtable format.

This focus-group research was conducted in two phases, as described fully below. The main purpose of Phase 1 was to identify capability challenges in intelligence analysis within the human domain and to assess the importance of these challenges, whereas the main purpose of Phase 2 was to validate, expand, and elaborate on the challenges and other issues identified in Phase 1.

### 2.2.1 Phase 1

The first two focus groups, comprising Phase 1, were convened in August, 2011, in Ottawa. Thirteen subject matter experts participated in Phase 1. Following the preliminaries, the focus

groups were organized around three sessions, the first two of which were themed and focused on identifying capability challenges. The final session, as we discuss below, involved revisiting the material elicited in the themed sessions. The themes used in the first two sessions were intended to help participants structure their observations and increase the likelihood that the information provided would also be of use to the research team.

The first session was organized around a "levels of organization" theme. The organizers began the session by noting that capability challenges could occur at various levels, including the individual, group or team, organization, all the way up to the community. Before beginning the discussion, participants were asked to individually rate the importance of each of the four levels of organization on a 5-point scale ranging from 1 (of little or no value) to 5 (extremely valuable) with 3 (quite valuable) as the midpoint of the scale. Participants were asked to begin with a discussion of issues that they regarded as important at the individual level, and the organizers transitioned the discussion to the team, organizational, and community levels, in turn. Using this framework, participants reflected on and discussed the challenges encountered within the intelligence domain at each of these levels. In practice, however, there was considerable "cross-over" once the discussions began, and the organizers did not force participants to restrict their comments to only those congruent with the particular level formally being discussed. The framework was meant to facilitate and structure discussion. However, it was not meant to curtail it or cause it to be stilted.

The second session explored intelligence analysis from a "functions of science" perspective. The organizers began this session by noting that applied behavioural science research can be described in terms of three primary functions or activities including clearly *documenting* current tools, methods or practices; rigorously *evaluating* the quality or efficacy of current or proposed tools, methods, or practices; and *developing* new tools, methods, or practices. The organizers explained that the aim of the second session was to explore how the various challenges raised during discussion might be best addressed through behavioural science. Discussion started with issues that would require mainly a documenting function, and then moved on to explore the evaluation, and development functions. Prior to beginning the discussion, participants rated the importance of each of the three functions of science on the same 5-point scale used in the first session.

By approaching the capability challenge question from these two distinct perspectives (level of organization and scientific function), we hoped to triangulate the most serious challenges raised with ways in which a program of applied behavioural science research might help address some of those challenges. Such information could be useful in prioritizing future R&D activities in support of the intelligence community.

In both of the themed sessions, the information elicited from participants was recorded on flipcharts by a member of the research team at the level specified by participants. Another research team member served as the note taker and documented the focus group discussions in detail.

These discussions yielded a number of issues and topics within each of the 7 categories (i.e., individual, group, organization, and community in Session 1, and document, evaluate, and develop in Session 2). During the ensuing break, the research team prepared a typed list of the topics raised by the participants organized by the seven categories just noted. Following the break, in Session 3, participants were asked to rate the potential value of future research addressing each issue from their own perspective on the same 5-point scale that was used to rate the value of each level of organization and function of science at the beginning of sessions one and two, i.e., the scale ranged from 1 (of little or no value) to 5 (extremely valuable) with 3 (quite valuable) as the midpoint of the scale.

Finally, participants responded to eight additional questions about the intelligence process. These questions addressed the relative importance of the process and outcome evaluations in assessing the quality of analytic products; the importance of having analytic standards and the extent to which these standards are already in place in participants' organizations and the community; the potential value of behavioural science research to improving analytic standards; and the relative importance of description and prediction in intelligence reporting. The specific questions posed to the participants and the response options for each of them are presented in Annex A.

### 2.2.2 Item categorization

Although the first two focus groups identified many issues and topics at the seven levels of analysis, there was a considerable redundancy in the issues that were identified by the groups. For example, the issue of career paths was identified as being important at multiple levels (e.g., individual, group, organizational). In order to provide the Phase 2 focus groups with the best possible framework of topics to discuss and rate, it was important to identify the common, underlying themes within the items generated in the first two focus groups and to group them into meaningful categories. Following the completion of the Phase 1, the researchers sorted the issues that emerged from Phase 1 and identified specific category labels for the discrete themes within each category. Overall, ten broad categories were identified (each containing specific issues and topics) that subsumed the many diverse issues identified during the Phase 1. The item categorization process is documented in Annex B, and its outcome is shown in Table 2.

### 2.2.3 Phase 2

The third and fourth focus groups, which comprised Phase 2, were convened in September, 2011, in Ottawa. Ten subject matter experts participated in Phase 2. These focus groups had a different structure than the earlier groups. These groups used the thematically sorted list generated in the previous two focus groups as a preliminary starting point. Participants were first asked to rate the importance of the 29 core issues stemming from the Phase 1 discussions.

In subsequent discussions, this set of 29 issues (categorized into 10 broad issues each containing a varying number of specific topics) served as the starting points for discussions. In each of the three sessions (about 40 minutes each) a small set of the ten broad issues was presented on a flipchart. Participants were asked to discuss their appropriateness (deleting or changing items if necessary), to expand the list if necessary, and/or to prioritize the issues from their unique perspectives. In each of these three discussion sessions, the allotted time was used to explore the listed challenges, as well as to identify specific research studies that might help to address a relevant challenge.

At the end of the session, additional discussion was then directed at the content of a community-wide survey for the intelligence community and toward exploring a practitioner-researcher collaboration network.

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# 3. Results

We present the results of this research in two major sections. The first section presents the quantitative assessments made by participants, and the second section summarises the focus group discussions.

## 3.1 Quantitative evaluations

### 3.1.1 Evaluations of the seven themes in the Phase 1

Before the start of the discussions in the Phase 1, participants rated the importance of each of the seven themes that were used to structure the discussions, namely, the four levels of organization (individual, group, organization, and community) and the three functions of science (documenting, evaluating, and developing). The ratings for most of the themes were similar and averaged around 4 ("very valuable") with an exception of the "documenting" function of science, which received a somewhat lower average rating of 3 ("quite valuable"). Table 1 reports the mean ratings. Similar ratings were not collected from the Phase 2 participants, because the discussions in the phase two were structured not around the themes but around the categories of issues generated by the Phase 1 participants.

**Table 1. Importance of research in each of the seven themes, Phase 1 (*N* = 13)**

| Session | Theme | Mean rating |
|---|---|---|
| Levels of organization | Individual level research | 4.1 |
| | Group level research | 3.5 |
| | Organization level research | 3.8 |
| | Community level research | 3.8 |
| Functions of science | Documenting current practices | 3.2 |
| | Evaluating current practices | 3.8 |
| | Developing new practices | 3.9 |

### 3.1.2 Quantitative evaluations of the categorized list of topics generated in the Phase 1

Several specific capability challenges were identified during the Phase 1 discussions, which were later categorized by the research team into a list presented in Table 2. Participants in both the Phase 1 and Phase 2 rated the importance of some or all of these issues. At the end of their focus group sessions, Phase 1 participants evaluated the importance of each of the capability challenges that their group had identified during the discussion. In contrast, participants of the Phase 2 evaluated the entire categorized set of challenges at the beginning of their sessions. The differences in methodology, therefore, do not license a simple averaging of the data across the phases. Accordingly, in Table 2, which reports the mean ratings of the value of research exploring each of the specific topics in the categorized list of issues, the mean ratings for Phases 1 and 2 are reported separately. The original list of issues generated by the Phase 1 participants along with their ratings are included in Annex C, and the categorization process is presented in Annex B.

**Table 2. Ratings of specific topics in the categorized list of capability challenges**

| Broad category | Specific topic or issue | Mean rating Phase 1 | Mean rating Phase 2 |
|---|---|---|---|
| 1) Analyst recruitment, motivation and career path | 1.1 - Identifying analyst selection criteria and developing selection tools; | 3.8 | 3.8 |
| | 1.2 - Identifying drivers of analyst motivation for recruitment, retention, and career progression. | 3.7 | 3.6 |
| 2) Analysis of tasks and competencies | 2.1 - Conducting task analysis for different roles (e.g., analyst, manager, collector); | 3.6 | 3.4 |
| | 2.2 - Identifying competencies for different roles and tasks (e.g., communication). | 3.6 | 3.5 |
| 3) Performance Evaluation | 3.1 - Defining expectations of analysts' performance; | 4.0 | 3.8 |
| | 3.2 - Developing objective evaluation methods of process and products; | 4.2 | 3.5 |
| | 3.3 - Developing tools to support performance evaluation and audit trails. | 3.6 | 3.5 |
| 4) Mentoring and Feedback | 4.1 - Identifying effective methods for the mentoring of analysts; | 3.6 | 3.4 |
| | 4.2 - Instilling openness and acceptance to feedback and criticism (and understanding the precursors of the lack of openness to feedback). | 3.1 | 3.5 |
| 5) Producer/Consumer Relationship | 5.1 - Clarifying the optimal producer-consumer relationship (and the manager's role in this process); | 3.5 | 3.9 |
| | 5.2 - Clarifying the analyst's role in understanding and defining product requirements; | 4.1 | 3.9 |
| | 5.3 - Educating consumers about intelligence; | 4.2 | 4.1 |
| | 5.4 - Identifying how products impact decision-makers. | 3.8 | 3.7 |
| 6) Analyst-Collector Understanding and Terms of Reference | | 3.9 | 3.6 |
| 7) Collegial Collaboration | 7.1 - Determining effective structures for analytic teams; | 4.2 | 3.3 |
| | 7.2 - Instilling a collaborative spirit and promoting informal networks. | 3.4 | 3.4 |
| 8) Communication of Intelligence | 8.1 - Understanding and improving the communication of uncertainty | 3.6 | 3.7 |
| | 8.2 - Utilizing information visualization techniques with consumers | 4.0 | 3.7 |
| | 8.3 - Impact of existing formats and varying communication of reports | 3.6 | 3.1 |
| 9) Tools, Techniques and Practices (TTPs) | 9.1 - Documenting and evaluating current TTPs and developing new TTPs. | 3.8 | 3.8 |
| 10) Intelligence Community | 10.1 - Understanding constraints and barriers to knowledge use imposed by organizational structure | 3.7 | 3.7 |
| | 10.2 - Better coordination, collaboration, and information sharing among agencies: | 3.8 | 4.5 |

| Broad category | Specific topic or issue | Mean rating Phase 1 | Mean rating Phase 2 |
|---|---|---|---|
| | 10.2.1 - Facilitating collaboration within the community; | 4.0 | 4.1 |
| | 10.2.2 - Developing a resource sharing mechanism; | 4.0 | 3.5 |
| | 10.2.3 - Developing standards for different information sources. | 3.6 | 3.2 |
| | 10.3 - Cross-organizational review of doctrine, tools, techniques and practices. | 3.5 | 3.3 |
| | 10.4 - Professionalization of intelligence analysis: | 4.1 | 3.8 |
| | 10.4.1 - Developing common standards; | 3.9 | 3.2 |
| | 10.4.2 - Developing community-wide career path for analysts | 3.5 | 3.7 |

Table 2 shows that research on all of the issues and topics identified in Phase 1 was rated to be quite valuable by participants in both phases. All of the mean ratings are on or above the midpoint of the scale. Issues related to educating consumers about intelligence, clarifying the analyst's role in understanding requirements, and professionalization of intelligence analysis were among the highly rated categories in both phases. Developing information sources standards within the community, cross-organizational review of doctrine and TTPs, and instilling collaborative spirit and promoting informal networks were among the lower rated categories in both phases.

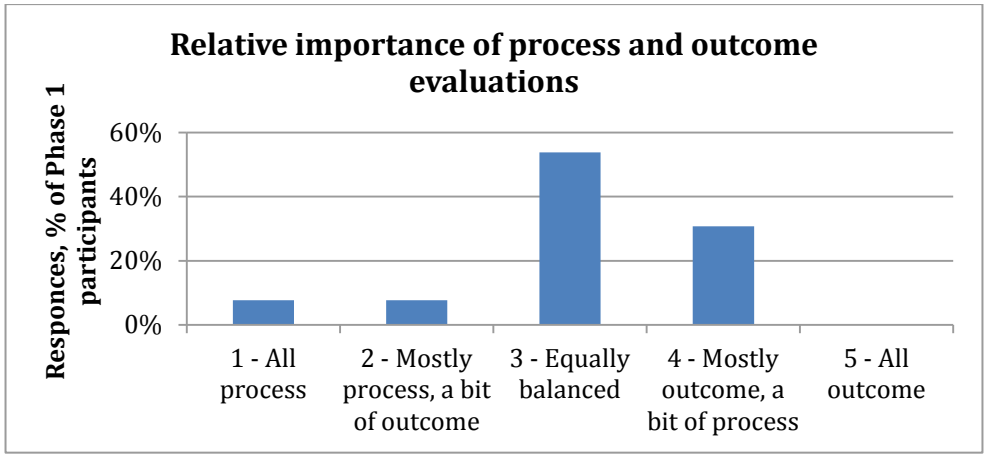
To further explore issues of interest, focus group participants in the Phase 1 were also asked several questions at the completion of the sessions (see Annex A for the list of questions with corresponding response options). These results are reported below.

### 3.1.3 Process-outcome distinction in evaluating quality of products and analysts' performance

Intelligence analysis can be evaluated in terms of the products or outcomes produced during the analysis, or in terms of the processes used to undertake analysis. As such, it is theoretically possible to produce a good product using a flawed process (or vice versa). A majority (62%) of participants reported being familiar with the process-outcome distinction, while the remaining 38% were not familiar with it.

Participants were also asked to rate the relative importance of process and outcome evaluations in judging intelligence activities. Process and outcome evaluations were rated as more or less evenly balanced in terms of their importance (average rating was 3.1, where the rating of 3 corresponds to "Equally balanced"). Figure 1 shows the distribution of the responses.

**Figure 1. Distribution of participants' responses regarding the relative importance of process and outcome evaluations in judging intelligence activities**




### 3.1.4 Analytic standards

Figure 2 shows the mean ratings of the importance of having analytic standards in place at organizational and community-wide levels, and Figure 3 shows the mean ratings of the extent to which analytic standards are already in place.

**Figure 2. Mean ratings of the importance of having analytic standards at organizational and community-wide levels**

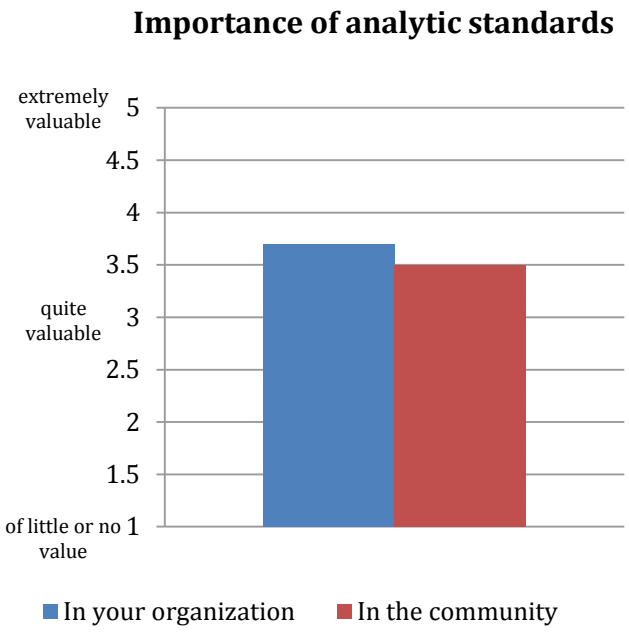
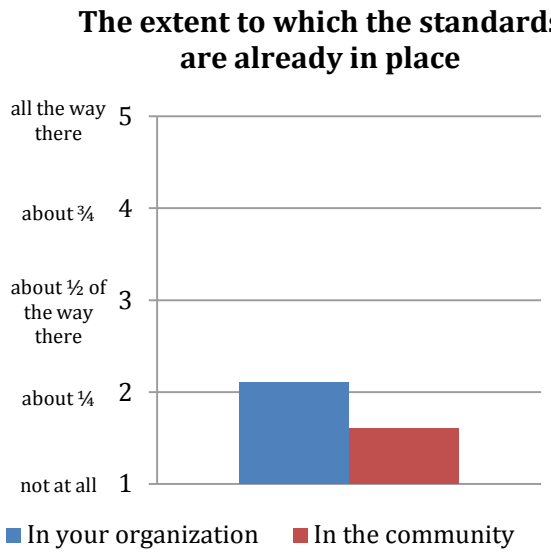


**Figure 3. Mean ratings of the extent to which analytic standards are already in place**




Although having standards was rated as quite valuable within both one's own organization and in the community, more generally, participants also rated this as a current area of concern, on average, reporting that their own organizations were only ¼ of the way toward having these standards in place. As Figure 3, shows, participants, on average, also thought that the community had an even further way to go in implementing standards.

Given that one of the goals of the focus groups was to determine how behavioural science research might facilitate the intelligence community, participants were also asked about how helpful behavioural science could be in facilitating standards. Behavioural science was seen as having some potential role in promoting better standards within the community, receiving the mean rating of 2.9, which corresponded to "quite valuable" on the relevant scale.

### 3.1.5 Description versus Prediction in intelligence analysis

Lastly, participants were also asked to rate the importance of description and prediction in intelligence analysis. The question was posed differently to the two focus groups; however, the results were obtained from the two groups were very similar. In the first focus group, participants evaluated the relative importance of description or prediction on a single scale that ranged from 1 (description is important, prediction is not) to 5 (prediction is important, description is not). The mean rating in the first group was 3.3, which roughly corresponds to the midpoint of the scale indicating that description and prediction are equally important. In the second focus group, participants were asked to evaluate the importance of description and prediction separately and both aspects received the same mean rating of 3.9, which corresponds to the "very valuable" level on the scale. Thus, prediction and description were seen being more or less of equal importance regardless of the response mode used by the researchers to elicit participants' views.

## 3.2 Summary of the discussions

In all four focus groups, the majority of the session was devoted to a discussion of the human capability challenges in the intelligence community. The following section summarises these discussions and presents them organized by topics listed in Table 2.

### 3.2.1 Analyst Recruitment, Motivation, and Career Path (Recruitment and Retention)

The recruitment and retention of intelligence analysts were identified as challenges facing the intelligence community in all four focus groups. One of the main human resource challenges that participants identified was the lack of validated selection tools, including the lack of guidelines on the appropriate selection process for intelligence professionals. Job descriptions and the required qualifications and skills for these positions remain very general for many intelligence positions within the community. Although this does not allow for an effective screening process, on the other hand, this allows for a sufficient flexibility in balancing the needs of the organization with the resources that are most readily available. Participants remarked, however that organizations vary in their ability to properly evaluate prospective candidates. Some participants also noted that the quality of the available recruit pools is also sometimes lacking, and that the selection process could make use of relevant cognitive testing, such as testing for analytic ability and critical thinking skills, to screen candidates.

Following selection, the next major challenge for the community is personnel retention. Participants discussed what motivates an analyst to be (and to continue to be an analyst), as this seems likely to be a key predictor of retention. Some participants said that one important motivator for analysts is to have decision-making responsibility over choosing the type of analysis for a problem.. Some participants also suggested that senior analysts can be motivated by opportunities to get involved in higher-level activities and by opportunities to give back to the profession, including by contributing to the professional development of junior colleagues.

Varying the scope and variety of the work that intelligence analysts do may help promote better retention as well. A common concern in all four focus groups was the limited career progression opportunities for intelligence analysts in their organizations and in the community, which is often constrained by their size and mandate. The number of senior analyst positions available is small and the conditions for promotion to those positions are not clearly defined. Therefore, competent analysts, who seek further professional development and career challenges, are likely to look for advancement opportunities elsewhere. The resulting turnover can have negative impact on the accumulation of knowledge within organizations. The fact that the Canadian intelligence community is relatively small makes the career path issue even more challenging.

The work of intelligence analysts has a number of intrinsic stressors that could also influence an organization's ability to retain analysts. Some of the most frequently mentioned stressors were the "tyranny of production" and "speaking truth to power." The performance of analysts is often measured by the number of assessments that they complete. Production typically occurs under intense time pressure and ensuring acceptable quality puts considerable stress on analysts, which is termed the "tyranny of production." The pressure associated with "speaking truth to power" arises when issues that analysts identify are not popular with their consumers, and, as a result, analysts have to manage the need to provide accurate information to their manager and consumers while protecting their own career interests.

In addition, participants noted that compensation levels for analysts are below that of industry and often they do not match the increasing expectations of current recruits. Some participants suggested that preventing the loss of hard won expertise and ensuring increased long-term retention may require further research into the motivating factors for intelligence professionals and the development of better career paths for analysts.

### 3.2.2 Tasks and Competencies

One of the core questions that remains to be answered according to some participants is "What skills and abilities do you need to be an analyst?" Participants discussed a number of skills that analysts require, such as having a *high level of interest and motivation*, *passion*, *critical thinking skills, decision-making skills,* a*ttention to detail*, *openness to criticism, general open-mindedness, clear and concise expression of one's thoughts, ability to perform under pressure, and staying open to the facts*. Some participants noted that although expertise is regarded as a good thing, it may also be associated with its own challenges such as developing tunnel vision, disregard for the input or feedback of others, and isolation from others. Trying new opportunities within the organization was identified as one way to counter these challenges.

Although personality and individual characteristics can certainly impact the performance of analysts, participants also argued that the real skills required for analysis are typically developed by the experience of being an analyst. Participants noted that advanced academic degrees do not always give analysts an advantage, as such analysts may tend to overcomplicate things, have difficulty in adjusting their academic writing style to the evidence-based succinct intelligence reporting style, and could also be more rigid in accepting alternative perspectives and criticism.

Participants recognised that there is a gap in understanding the various tasks and competencies for different roles (e.g., analyst, manager, collector, etc.) within the intelligence community. They also argued that cognitive task analysis could help advancing this understanding by documenting the demands on collectors, analysts, and managers. Understanding these demands together with identifying the skills that feed into the core competencies would be a helpful contribution for future research to make.

### 3.2.3 Performance Evaluation

The discussions also elaborated on the enduring challenges associated with evaluating performance within the intelligence community. Among these challenges were the lack of clear set of expectations and objective indicators of analysts' performance; the lack of information on the usage and feedback from the consumers on the quality of the reports; and the general lack of appropriate performance evaluation tools. In addition, some participants noted that performance evaluation is not necessarily linked to salary increases, which could in turn create the perception of it as a token process.

Sound performance evaluation practice should be based on clear performance expectations that are linked to objective performance indicators. Participants discussed a number of relevant indicators that could be considered, such as the predictive accuracy of an intelligence product, the actual impact of the product, its timeliness, consumer satisfaction, and its creative aspects. However, information on many of these indicators is generally unavailable and, even if it were available, it is often very difficult to quantify. Therefore, developing methodology for gathering relevant information and for quantifying the possible performance indicators was identified as an important effort for the community.

Consequently, participants discussed the value of finding a way to document the actual usage of intelligence products that would assess whether the information produced reaches the target audiences, how often consumers actually use the products, and what aspects of the report they give attention to and for how long. Similarly, some participants noted that gathering feedback from consumers and understanding how well the products suit their needs would also be a critical indicator of the products' impact. Although the access to the consumers (and therefore, availability of their feedback) varies among the organizations, the prevalent opinion in the focus groups was that feedback from the consumers was largely unavailable.

Participants noted that intelligence analysis can be performed well and, yet, not be valuable to the client. Therefore, evaluation should encompass assessment of both the process, by which an intelligence product was created, and the intelligence product. This argument echoes the results of the quantitative evaluations of the relative importance of product and process evaluation collected from the Phase 1 participants.

Focus group discussions emphasized that, in order to evaluate the intelligence process, intelligence organizations need to develop defendable, reviewable processes and procedures for audit trails. Analysts need to be able to show the tracking of the information that they used to arrive at their conclusions, which could serve as a basis for an objective process evaluation. Audit trails would show how the information supports the main findings and conclusions of the analysis, which would also illustrate the decision-making processes, and such trails would also show how the intelligence analyst reached their conclusion. Participants argued that audit trails could promote greater acceptance by the consumers of conclusions drawn in intelligence products.

Although the majority of the discussion in the focus groups centered on evaluation of an individual analyst or a single product, there was also discussion about the potential value of being able to evaluate the performance of units or organizations within the intelligence community. Participants argued that it would be ideal to audit the performance of an intelligence unit as a broader form of organizational performance.

Overall, the area of individual and organizational performance evaluation, then, stands as a particularly important area of future research that could be beneficial to the intelligence community.

### 3.2.4 Mentoring and Feedback

The transfer of knowledge from experienced analysts to more junior personnel was identified as another key challenge in the community. Some participants suggested that this problem might be mitigated through better mentoring and feedback. Participants generally expressed strong support for the concept of mentoring and indicated that their organizations are actively working to promote mentorship. For example, the addition of mentoring onto the balanced scorecard template, which is used in various government departments, serves as recognition of its positive impact within the community.

However, some participants also noted that mentoring can be taxing on mentors, and that the best mentors (e.g., those with high levels of expertise) are often least able to afford the time to mentor. Therefore, meaningful organizational support for mentoring is required, such as the alleviation of work stresses and/or improved reward structures that provide incentives for experienced personnel to mentor. Participants indicated that, currently, these reward structures were lacking. Participants suggested that empirical evidence of the positive impact of mentoring could facilitate the implementation of these organizational incentives.

The ability of intelligence personnel to provide constructive feedback and, likewise, their ability to receive feedback and criticism was identified as an important challenge. Participants noted that intelligence analysts often lack both of these skills. Developing in intelligence personnel greater openness to criticism and helping them to learn to balance the provision of positive and negative feedback more adeptly were seen as important issues that required attention.

### 3.2.5 Producer-Consumer Relationship

Discussions about the producer-consumer relationship were prominent within all of the focus groups and highlighted a number of issues. A range of organizations represented in the focus groups also provided a variety of perspectives on these issues and their prominence. Participants agreed that the nature of the producer-consumer relationship (actual and optimal) may change as one moves back and forth between tactical and strategic levels. This suggests that although a higher level of clarity concerning the ideal producer-consumer relationship would be helpful, a clear understanding of the many different types of producer-consumer relationships within the community is an important prerequisite. The organizations represented in this study produce intelligence for many different types of consumers. Some organizations serve a long line of users, and this has an impact on analysts' awareness of who their consumers are. Thus, for some organizations, identifying their consumers and receiving feedback from them is a challenge.

The discussions revealed that one of the key issues with which the community is struggling is lack of clear lines of communication between intelligence producers and consumers. This issue manifests itself in the lack of clear, specific and timely product requirements, and later, in the lack of feedback on the final product from the consumers. The disconnection between intelligence producers and consumers is deepened by their cultural differences and the common "arms-length" relationship between analysts and consumers that is intended to protect the analyst from influence that might impede their ability to deliver an unbiased assessment. Although this type of relationship may protect the analysts, this distance often results in the lack of mutual understanding. Participants commented that producers often do not understand how consumers actually use their products and how their products impact decision-makers. The consumers often do not clearly understand the intelligence process, its capabilities and limitations.

Participants argued that many intelligence consumers do not have an accurate understanding of how to formulate their questions. Accordingly, there is a need to accurately define consumer requirements and determining what role analysts or managers should play in this process. In addition, consumers might not fully appreciate the professional process required to conduct intelligence properly, and what information intelligence can and cannot provide. This lack of knowledge on the part of consumers can affect the entire production process as well as consumers' acceptance and usage of the final product. Consequently, some of the important challenges within the intelligence community that participants identified were the need for:

i) educating consumers about intelligence;

ii) formal feedback mechanisms on the quality and usefulness of intelligence products;

iii) developing tools that will allow tracking the actual usage of products;

iv) developing tools to help understand the full impact of an intelligence product on decision makers.

The formal feedback and the actual product usage statistics would help ensuring products' relevance to the consumers and could also be integrated into the performance evaluation metrics.

Another issue related to producer-consumer relationship discussed was the politicization of intelligence tasking. Participants noted that it was impossible to totally separate intelligence analysis from the political domain, and that the media coverage plays a particularly important role in influencing political responses to issues and subsequent intelligence tasking. This is problematic, they argued, because it often detracts attention from potentially more serious (but less prominent) threats. It also might result in duplication of efforts among different organizations that are being tasked to prepare assessments of the same issue.

### 3.2.6 Analyst-Collector Understanding and Terms of Reference

Some participants identified the relationship between the analyst and collector as an important one with many interdependencies. Participants argued that the roles and responsibilities of the analyst and collector need to be clarified, and that analysts needed to be involved in (or at least well aware of) the collection process. Participants suggested that this relationship would differ at the strategic versus the tactical level. For example, in a strategic situation, it might be impossible to be in touch with an active collector or to probe for particular information. At the tactical level, however, this relationship might be less constrained. Whatever their relationship, focus groups indicated that analysts and collectors need a dialogue and to establish their terms of reference in order to work together more effectively. This is a current gap within the intelligence community.

### 3.2.7 Collegial Collaboration

Collegial collaboration is an important challenge for the intelligence community, because as one participant noted "it takes a network to compete against a network." There are two aspects of collegial collaboration that were discussed by the groups: the formal aspect of collegial collaboration in the context of analytic teams; and the informal aspect of collegial collaboration in the context of promoting informal networks among analysts.

On a formal level, some participants argued that there should be more fluidity in the structures used to do intelligence analysis at the organizational and team level. Participants argued that research exploring the impact of varying team structures on the performance of teams and their members would be helpful.

Because Canada has a relatively small intelligence community, participants argued, informal collegial networks are highly instrumental in overcoming one of the serious problems – the lack of information sharing at the organizational and community levels. However, this collaboration is often interpersonal, ad hoc in nature, and might also be negatively influenced by operational requirements such as time pressure and a lack of a mechanism for easy sharing of information (discussed in more detail within Section 3.2.10).

Given the facilitative role of informal networks, one of the challenges for the community according to participants is to find ways to provide intelligence personnel with opportunities to build informal networks and to provide an infrastructure that will promote these relationships.

### 3.2.8 Communication of intelligence

The need to ensure the highest possible level of communication with consumers was another important theme emerging from the focus groups. Effective communication should be clear, simple, concise, and geared to the audience. Participants observed that communication of uncertainty is an important aspect of intelligence reporting that currently relies on verbal

expressions of chance and risk. Verbal expressions inherently allow for a certain degree of variability in their interpretation, which can undermine clarity of communication. Participants noted that one of the community's current challenges is the lack of a community-wide standard for communicating chance and risk, and that there is a need for more standardization in the language used to communicate uncertainty.

Some discussion also centred on structural tools or processes that might facilitate better communication in written reports, such as an up front "bottom-line assessment" or the "key judgements" section. Different presentation formats, including the use of visualisation techniques in the reports were also identified as factors that could facilitate communication of intelligence. Participants noted that the intelligence community lags substantially behind the private sector in its use of information visualization techniques and tools and called for further research and development of information presentation and management tools for the community.

Participants argued that there are many different ways in which intelligence could be presented to consumers, but that there is no single best format. Different consumers may have different information needs and information format preferences. Therefore, it is critical for analysts to know their audience and to gear communication and its presentation to their consumers' needs. Research exploring alternative formats for reports and other information visualization techniques could help to promote better communication with consumers.

### 3.2.9 Tools, Techniques, and Practices (TTP)

Although the analytic process seems particularly amenable to being supported by technology, participants argued that sophisticated resources are not uniformly available to the intelligence community and that their use might be prevented by the tight timelines for completing assessments. Some participants argued that analysts need tools and techniques to help manage the sheer volume of available information and that the community currently lacks the technology that could assist the information filtering process calling for the development of new tools that could meaningfully assist with that process.

It is not clear which of the currently available tools are actually being used by different organizations and how effective they are. Therefore, cataloguing tools that are being used in the field and identifying personnel who have expertise in each of them was seen as a useful activity. Participants also emphasised the need for empirical assessment of the effectiveness of current methodologies available or used in intelligence analysis.

In addition, participants noted that a research capability that could simultaneously help intelligence personnel to understand how to define their technology requirements, paired with an evaluation function that could assess usability, performance and functionality of technology products would be helpful.

Another issue that emerged from the discussions was the need for documenting the methodological approaches and techniques that intelligence analysts use and for comparing them to the prescribed methods (e.g., doctrine and standards). In addition to comparing the doctrine and practice, participants suggested that examining the congruence between the doctrine and human capability would also be a useful exercise. These activities would allow identifying and addressing gaps between the doctrine and practice.

### 3.2.10 Intelligence Community

Within all four focus groups, much discussion focused on the challenges facing the broader intelligence community.

**Information sharing and coordination**

One such challenge is the lack of efficient information sharing among agencies. Participants highlighted the need to better understand existing barriers to information and knowledge sharing. Some of the factors that contribute to the current situation discussed were: i) the lack of trust among organizations, which leads to rivalries and protectionism of the information that organizations have acquired; ii) organizational structure and bureaucratic constraints, such as policy barriers, legislative issues, and varying levels of security clearance among agencies.

According to participants, developing common standards and guidance for evaluating the quality of information sources and determining information classification level would facilitate information sharing among agencies. In addition, participants noted that research that documents the available resources (technical or non-technical) within each organization and that provides information about how to access these resources would be particularly helpful.

Support requests that specific organizations receive from consumers are also often not shared with other organizations and potentially several agencies might be tasked to produce intelligence on the same "hot" topic. The Canadian intelligence community, having a relatively small size, is particularly prone to the problem of overextending its resources, and that unclear or overlapping mandates among organizations can create unnecessary redundancy. Participants noted that having more clear delineation of roles and responsibilities, promoting more of a cross community view, endorsing joint projects within the community as well as developing better information sharing mechanisms could facilitate a higher level of coordination. One suggestion made during the focus group discussions was to create a central repository, or a government "dashboard" that would allow a quick overview of ongoing efforts within other parts of the community. Participants argued that adopting a truly cross-organizational focus might require having the diverse intelligence organizations in Canada led by a strong focal point (e.g., a national Director).

Another challenge within the community is a lack of clear understanding of the commonalities and differences in doctrine, practice, process, and product among the organizations. Research working to promulgate a cross-organizational review of the many different players within the community would be of benefit. In addition, participants indicated that creating a community-wide portal that would allow sharing doctrine and soliciting community feedback and engagement would be of benefit.

**Professionalization**

A good deal of discussion focused on the need for a professionalization of the intelligence community that promotes best practices within the community. Professionalization was expressed as a need for the community to reflect on the current state of affairs within the community and to imagine the intelligence landscape of the future. For example, participants noted that one of the gaps within the community is no person or organization is currently formally assigned to consider the future development of intelligence processes and product.Similarly, participants noted the need for a community-wide exploration of the question "what does it mean to be an analyst?"

Participants suggested that professionalization of the community could be promoted through the development of common standards for intelligence products and training of the personnel. Participants suggested that the development of common product templates and "reader guides" that

are already implemented in some organizations would help consumers to understand the reports. In addition, such standards would also facilitate consumer education about intelligence products.

Participants agreed that in addition to the intelligence training organized by the Privy Council Office, more formalized standardization efforts are needed within the intelligence training system. The development of a list of standardized courses that all personnel within the community should take was seen as beneficial. In addition, participants noted that intelligence training should also place emphasis on laying out the current intelligence landscape, providing information about other organizations performing intelligence analysis and their mandates.

A common theme throughout the focus groups was that although seeking additional standardization and consistency of approaches within the community is important, it is also important to recognize the uniqueness of the roles played by (and the demands on) the many members of the community. Participants strongly suggested that a "one size fits all" approach will not work within the community.

As noted in earlier sections of this report, inadequate opportunity for career progression is a challenge for analysts within the intelligence community. In addition, there is a lack of consistency in analyst job categories among organizations, which results in seemingly unjustified discrepancies in salary and governing collective agreements for analysts that perform similar functions in different organizations.

Discussing the limited career progression for analysts, participants emphasized the importance of developing community-wide career paths and secondment opportunities for analysts as a way to provide analysts with greater development opportunities and to promote retention. Participants observed that these initiatives would require interagency coordination. Although, secondment program appears to be beneficial, participants suggested that further research into the actual impact of secondment on organizations and personnel would be highly valuable. Such research could be useful in guiding the education and implementation of the secondment program.

## 3.3 Summary of Results

The four focus groups identified and discussed a wide range of current issues and challenges within the intelligence community that could be supported by future research. Conducting the focus groups in two different phases allowed to both freely identify issues of concerns and to reflect critically and elaborate on the identified issues. The Phase 2 participants indicated that the categories compiled from the Phase 1 were appropriate and in line with their experience. The relative high importance ratings given by the Phase 2 participants to all of the items served as an additional validation for the set of issues compiled from the Phase 1.

Quantitative ratings of importance of different issues that were gathered from participants of both phases were intended to provide a means of differentiating and prioritising the various capability challenges identified. However, all issues received relatively high mean importance ratings in both phases, and, therefore these ratings cannot serve as a meaningful basis for prioritisation. On the other hand, the relative similarity of the ratings among the participants serves as an indication of agreement on the value of research on the topics identified among the focus groups.

Although participants discussed pertinent issues at different levels (e.g., individual and group), there was significant interest in the community-wide, inter-organizational issues. Participants acknowledged that there is a certain degree of duplication of effort among different organizations,

which leads to a suboptimal use of the available resources in the community. In this light, participants discussed such topics as the need for better information sharing, collaboration, and coordination within the community, the need to promote joint projects and cross-organizational focus in sharing responsibilities. Another community-wide issue, professionalization of intelligence analysis, also received significant attention in all four focus groups. Discussions focused on such topics as standardization of product and training, implementation of a community-wide secondment program, and establishing a community-wide career path for intelligence analysts. The quantitative ratings of the importance of analytic standards collected in Phase 1 showed that participants viewed having standards as quite valuable, however not yet adequately in place. Overall, the overarching community concerns were a high priority for the members of the intelligence community represented within the focus groups.

Other issues related to the tools, techniques and practice of intelligence were also discussed at length during the sessions. These issues included the need to document existing tools and practices, as well to evaluate their effectiveness. Communicating intelligence through improving the communication of uncertainty, improving information visualization techniques, and allowing for flexibility in presentation formats to suit different preferences and styles were also identified as priorities. On the other hand, participants also noted the need for standardization of classification and language used to communicate risk and uncertainty.

The relationship with consumers was another topic that received considerable attention in all focus groups. Some participants observed that intelligence consumers (especially when they are removed from the intelligence producers) often lack the understanding of the intelligence process, how to properly formulate their intelligence requirements, and how to interpret information in intelligence products. Hence, the need for educating consumers about intelligence was discussed. The lack of feedback from consumers on intelligence products was also raised as a significant issue for many organizations. The above-mentioned consumer-producer relationship issues are not prevalent to all organizations, however. The consumer base for different organizations within the community varies considerably, which affects the predominance of the various producer-consumer relationship issues on their operations.

Issues related to analyst recruitment, motivation, development, and performance evaluation were also discussed. Participants discussed such issues as the need for identifying the essential skills required of analysts that could be incorporated into the selection process and the need to improve the selection process itself. Some participants indicated that the current intelligence analyst selection criteria and processes are too general and do not always allow for effective screening of candidates. This issue is related to the need of identifying the essential skills required of intelligence analysts and developing assessment tools that would allow evaluating these skills. Participants commented that retention of analysts has been a considerable issue for many organizations in light of limited career progression available for analysts. The increasing expectations of the new generation of recruits that some participants observed further exacerbate this issue.

Participants also highlighted the existing challenges in evaluating performance of intelligence analysts and quality of intelligence products. Several potential performance indicators were mentioned, including the predictive accuracy of a report and its impact, and the product's ability to provide timely information to the consumer. Participants suggested that tracking the actual usage of the products and developing reviewable processes with audit trails would facilitate the performance evaluation process. However, in many organizations currently there are no clear performance expectations, which are linked to objective indicators, as well as there is no consensus within the

community on what performance indicators are the most critical. There was a consensus among the participants on the relative importance of evaluating intelligence process versus intelligence product. As was indicated by the quantitative evaluations collected during the Phase 1, participants view both process and product evaluations as equally important, which suggests that there is a need for both product- and process-base performance evaluation indicators.

The development of performance evaluation measures also has an impact on the ability to identify specific selection criteria for analysts. In order to identify critical skills for analysis, specific skills and stable individual differences have to be first linked with analysts' performance, which requires sound performance evaluation criteria and measures.

Overall, the focus group discussions indicated a wide range of issues and challenges facing the intelligence community, as well as offering considerable insight about how some of these issues can be addressed in the future. This issue is addressed in more detail in the remaining chapter.

## 3.4 Limitations

This research has some limitations that should be considered in interpreting its results.

The list of issues identified by the participants is not a complete and exhaustive list of capability challenges faced by the community. The first two focus groups used a "brainstorming" process to allow participants to identify the topics and issues of most concern from their own perspectives. Although this free-flowing environment promoted good discussion, it does not guarantee that all of the pertinent issues were identified or received sufficient attention during the discussion. The Phase 2 focus groups validated the set of issues identified during Phase 1 and expanded it to a certain extent. However, Phase 2 discussions were guided by the issues identified during the Phase 1, which had an influence on the direction the discussions took and might have prevented other topics from emerging.

It is also worth noting that participants represented in this convenience sample may or may not be representative of community members as a whole. This also suggests that there may be additional issues or challenges within the community that were not identified by the current group of participants, or that issues may be weighted differently within a larger sample. Some of these may be identified in the planned community-wide survey.

Another limitation is that the differences in quantitative assessment methodology from Phase 1 to Phase 2 prevent aggregation of the quantitative data. As the two phases of research used a different format, it is not possible to quantitatively compare the value ratings of issues collected from Phase 1 and Phase 2. Similarly, the quantitative evaluations cannot be used to prioritize the issues identified as was initially hoped. However, the qualitative data provide an important bridge between the two phases of research.

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# 4. Research Implications and Conclusion

## 4.1 Implications for Research

As one of the primary goals of this research was to help inform future research efforts, this section identifies the issues and challenges identified within these focus groups that can be supported by future research from the behavioural science and other domains. Table 3 lists different issues discussed in the focus groups along with the proposed research directions that either emerged directly from the focus group discussions or were indirectly implied.

**Table 3. Research in support of the intelligence community**

| Broad category | Specific issues and topics | Research supporting the intelligence community |
|---|---|---|
| 1) Analyst recruitment, motivation and career path | 1.1 Identifying analyst selection criteria and developing selection tools | – Identify essential skills and abilities for intelligence analysis;<br>– Create analyst selection criteria using cognitive testing;<br>– Develop and validate selection tools in relation to objective measures of performance; |
| | 1.2 Identifying drivers of analyst motivation for recruitment, retention, and career progression | – Identify and analyze intelligence analyst motivational drivers;<br>– Identify current and develop potential organizational strategies to strengthen analyst motivational drivers to facilitate analyst retention;<br>– Analyze currently available career paths and develop potential career paths to promote better career progression for analysts; |
| 2) Analysis of tasks and competencies | 2.1 Conducting task analysis for different roles (e.g., analyst, manager, collector) | – Use cognitive task analysis to understand requirements of personnel in different roles; |
| | 2.2 Identifying competencies for different roles and tasks (e.g., communication) | – Identify, validate and create tools for identifying core competencies for intelligence personnel in varying positions; |
| 3) Performance Evaluation | 3.1 Defining expectations of analysts' performance | – Use research to support the performance evaluation process for intelligence personnel;<br>– Help to identify and quantify appropriate performance metrics;<br>– Develop methods and tools that would allow tracking analysts' performance over time throughout their career; |
| | 3.2 Developing objective evaluation methods of process and products | – Create and validate tools for understanding the value and knowledge transfer of intelligence products to the consumer;<br>– Use research to help quantify the objective value of an intelligence product and identify the critical evaluative dimensions;<br>– Evaluate the performance of an intelligence unit against performance criteria; |
| | 3.3 - Developing tools to support performance evaluation and audit trails | – Create and validate tools for the documenting the usage of intelligence products;<br>– Create and validate tools to identify audit trails for intelligence products and illustrate decision-making processes; |
| 4) Mentoring and Feedback | 4.1 Identifying effective methods for the mentoring of analysts; | – Identify strategies that promote knowledge transfer among analysts;<br>– Conduct research to critically assess the impact of mentoring |

| Broad category | Specific issues and topics | Research supporting the intelligence community |
|---|---|---|
| | | in relation to key outcomes (e.g., performance, retention, engagement) |
| | 4.2 Instilling openness and acceptance to feedback and criticism (and understanding the precursors of the lack of openness to feedback). | – Conduct research to understand the precursors to lack of openness to feedback;<br>– Develop intervention measures and training techniques to promote greater openness to criticism and feedback; |
| 5) Producer/ Consumer Relationship | 5.1 Clarifying the optimal producer-consumer relationship (and the manager's role in this process) | – Analyze socio-technical environment of the producer-consumer interactions and requirements;<br>– Identify ways to overcome knowledge and experiential barriers between producers and consumers of intelligence;<br>– Document the varied nature of the producer/consumer relationship within Canada, identifying best practices;<br>– Research characteristics of the consumers; |
| | 5.2 Clarifying the analyst's role in understanding and defining product requirements | – Analyze the nature of the producer-consumer relationship and the nature of consumer requirements;<br>– Explore the effectiveness of varying communication strategies on analyst/consumer relationships; |
| | 5.3 Educating consumers about intelligence | – Develop educational strategies and facilitate the consumer education process; |
| | 5.4 Identifying how products impact decision-makers | – Identify the key factors that determine impact of intelligence products on decision makers;<br>– Develop measures to evaluate these key factors and the impact of intelligence products on decision-makers; |
| 6) Analyst-Collector Understanding | 6.1 Promoting a clear understanding of roles and interdependencies of analysts and collectors | – Research the nature and constraints of the analyst/collector relationship within varying segments of the community (e.g., strategic/tactical); |
| 7) Collegial Collaboration | 7.1 Determining effective structures for analytic teams; | – Research the most effective structure for analytic teams; |
| | 7.2 - Instilling a collaborative spirit and promoting informal networks. | – Research ways to promote and support informal networks through organizational means that enable collaboration; |
| 8) Communication of Intelligence | 8.1 Understanding and improving the communication of uncertainty | – Research ways to improve the communication of uncertainty and risk; |
| | 8.2 Utilizing information visualization techniques with consumers | – Develop and validate new information presentation techniques for communicating with consumers;<br>– Investigate how to best tailor information presentation to the preferences and needs of consumers; |
| | 8.3 Impact of existing formats and varying communication of reports | – Evaluate the effectiveness of existing report formats on communication of intelligence;<br>– Develop and evaluate alternative report formats; |
| 9) Tools, Techniques and Practices (TTPs) | 9.1 Documenting and evaluating current TTPs and developing new TTPs. | – Document and validate existing TTPs;<br>– Determine realistic measures of performance in preparation for validation efforts;<br>– Identify discrepancies between prescribed approaches (e.g., in doctrine) and actual practice within the intelligence community;<br>– Identify the gaps in the existing TTPs, and develop and validate new TTPs;<br>– Evaluate congruence between doctrine and human capabilities (e.g., judgment and decision-making); |

| Broad category | Specific issues and topics | Research supporting the intelligence community |
|---|---|---|
| | | – Create a common resource hub for tool support and training (document personnel trained in specific techniques who could serve as resources);<br>– Establish technical support service to support intelligence managers in evaluating the usability and feasibility of new technologies; |
| 10) Intelligence Community | 10.1 - Understanding constraints and barriers to knowledge use imposed by organizational structure | – Map information flow and knowledge use within different organizations and identify constraints and barriers to knowledge and information flow due to various factors, including organizational size, complexity, and structure; |
| | 10.2 - Better coordination, collaboration, and information sharing among agencies<br>and<br>10.2.1 - Facilitating collaboration within the community | – Document bottlenecks in the flow of information within the intelligence community;<br>– Identify reasons for failures of collaboration (e.g., lack of willingness or lack of collaborative tools);<br>– Research collaborative tools that would benefit the intelligence community (e.g. "dashboard" that displays the ongoing efforts within the community);<br>– Conduct social network analysis research of the intelligence community to identify any gaps in collaboration; |
| | 10.2.2 - Developing a resource sharing mechanism | – Document the available technical and non-technical resources for information sharing within organizations in the community;<br>– Research the merits of available collaborative tools, such as shared websites or portals for the sharing of documents, and identify or develop a viable resource sharing mechanism; |
| | 10.2.3 - Developing standards for different information sources | – Identify existing information sources and their characteristics;<br>– Identify current usage requirements that different organizations have for different information sources;<br>– Support the development of standards for varying sources of intelligence information; |
| | 10.3 - Cross-organizational review of doctrine, tools, techniques and practices | – Document cross-agency doctrine and TTPs with a view to identifying similarities and differences; |
| | 10.4 - Professionalization of intelligence analysis | – Research the intelligence analyst identity and professional characteristics;<br>– Document the "intelligence landscape" and training requirements in the community;<br>– Support the development and implementation of training curriculum and standardization of the intelligence training;<br>– Research the impact of different types of training; |
| | 10.4.1 - Developing common standards | – Identify potential areas that might benefit from standardization;<br>– Support the development of standardization practices and standard implementation procedures;<br>– Support the standardization of the intelligence process;<br>– Analyze the potential impacts of increased standardization and formalization on the profession; |
| | 10.4.2 - Developing community-wide career path for analysts | – Research ways to improve career paths for analysts;<br>– Support the creation and coordination of a secondment initiative within the community;<br>– Analyse benefits, drawbacks, and organizational impact of secondments. |

There is significant potential for research to make a meaningful contribution to improving intelligence production in the future. Many of the research issues identified in Table 3 show the potential contributions of behavioural science to help better mesh human capabilities with the requirements of intelligence production (e.g., understanding judgement and decision-making processes that might influence analysts). Given the full range of possible issues to address, future efforts should work to further refine research topics and to identify the most critical issues for the intelligence community.

## 4.2 Conclusion

The aim of the research described in this report was to capture a broader range of perspectives from the Canadian intelligence community. Focus group discussions with members of the intelligence community offered rich insights into the current state of affairs within the community. Focus group participants seemed genuinely engaged in the process of discussing both strengths and challenges and seemed motivated to offer candid observations about the intelligence community in order to explore how current challenges can be addressed through future research. At the same time, focus group discussions consistently suggested that members of the intelligence community in Canada function quite well to produce quality intelligence products despite the time pressures and constraints that they typically face.

Although current functioning was perceived to be adequate, the intelligence community in Canada faces internal pressure to evolve and appears to be motivated to push itself forward, and to strengthen its practices at a broad level. Participants within the focus groups expressed both great pride in their work and in their community, while simultaneously expressing eagerness to further develop their enterprise. With years of accumulated experience among its members, the focus group participants identified a number of areas for potential improvement in order to advance the interests of the community and further improve the internal systems within organizations.

Even though there was considerable range of experience represented within the focus groups, there was a good deal of agreement about the key challenges. Perhaps not surprisingly, discussions indicated a high level of interrelatedness among the challenges facing the community. For example, the current lack of collaborative tools within the intelligence community is inextricably linked with the ability to share information and to adopt more standardized approaches among organizations. Unless the many different agencies that must work collaboratively have the resources and tools that they need (e.g., common or compatible software), this issue will not be adequately addressed and information sharing will not be at an optimal level.

Participating intelligence professionals expressed considerable interest in increased professionalization of the area, standardization of intelligence processes and products, and a desire to cultivate a more community-wide perspective. However, a common theme throughout the focus groups was that although seeking additional standardization and consistency of approaches within the community is important, it is also important to recognize the uniqueness of the roles played (and the demands on) the many players within the community. As noted earlier, participants strongly suggested that a “one size fits all” approach would not benefit the community in the long run.

It is also important to note that many of the problems identified by personnel within the focus groups are not necessarily unique to the intelligence community. For example, participants noted that human resource issues (e.g., retention and career paths) are common challenges within many

organizations. Similarly, within any system in which multiple complex organizations must share information and coordinate their efforts, the need for improved collaboration seems likely to be identified as a familiar challenge. This suggests that although it is important to address the concerns identified, it may be helpful to consider how other organizations with different mandates cope with similar concerns.

The results of this research are congruent with the interview findings of Derbentseva, McLellan and Mandel (2011). Although this work represents a broad range of experience from many additional organizations, many of the themes emerging within these focus groups were also identified by the previous study (e.g., the need to identify essential competences, evaluation of tools and techniques and development of new products). Although this research explores and elaborates a broader range of issues, it is reassuring to see many similar issues identified by other members of the intelligence community.

Focus group discussions showed high levels of synergy between the current needs of the intelligence community and the potential for scientific research to contribute to documenting, evaluating and developing effective products and processes. Members of the intelligence community commonly referenced the need for empirically validated processes, techniques and outcomes in order to ensure the highest possible levels of effectiveness within their field. It is encouraging that personnel within the intelligence community saw research as being a valuable way to address the current challenges explored during discussions. This suggests that scientific approaches are likely to offer significant value to the community as it works to better formalize the production of intelligence analysis.

At the same time, however, discussions also highlighted the need for continued discourse to help bridge communication and experiential gaps between intelligence practitioners and scientists. Just as focus group participants indicated that analysts and consumers often speak a somewhat different language, similar challenges in bridging the gap between practitioners and researchers were evident during the focus groups and have been identified as a challenge for effective science-practitioner partnerships in the intelligence domain (Mandel, 2009; in press). Practitioners varied in their ability to see and articulate how research could inform their efforts, with some personnel seeming very able to express natural linkages between their practice and research, and others clearly identifying that research might be able to assist them, but indicating that they had not been adequately exposed to research to understand exactly how. Similarly, due to their limited exposure to the day-to-day challenges of intelligence personnel, researchers conducting the focus groups might not have fully grasped all of the nuanced needs of the intelligence community that future research could address. One potential solution to bridging this gap between practitioners and researchers would be to establish a practitioner-researcher collaboration network that would provide a venue for continuous dialogue and the development of mutual awareness and understanding. Furthermore, the interaction and dialogue to more clearly define the issues and challenges within the intelligence community will need to continue.

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# Annex A – Additional questions posed to Phase 1 participants

There were eight additional specific questions posed to participants of the first two focus groups. For each question, participants were instructed to select one of the available answer options. Both the questions and their available answer options are presented below:

1. Have you thought about the process-outcome distinction in assessing the quality of analytic products and the performance of analysts? Answer options:
   - YES
   - NO
2. How would you rate the relative importance of process and outcome evaluations? Answer options
   1. ALL PROCESS
   2. MOSTLY PROCESS, A BIT OF OUTCOME
   3. EQUALLY BALANCED
   4. MOSTLY OUTCOME, A BIT OF PROCESS
   5. ALL OUTCOME
3. How important it is to have analytic standards in your organization?
4. How important it is to have analytic standards in the community?

The above two questions were rated on the same 5-point scale ranging from 1 (of little or no value) to 5 (extremely valuable).

5. To what extent do you think these standards are adequately in place in your organization?
6. To what extent do you think these standards are adequately in place in the community?
   The above two questions had the following answer options:
   1. Not at all
   2. About ¼ of the way there
   3. About ½ of the way there
   4. About ¾ of the way there
   5. All the way there

7. How valuable do you think behavioral science research could be in helping to improve standards? On a 5-point scale ranging from 1 (of little or no value) to 5 (extremely valuable)

8. How would you rate the relative importance of description and prediction in intelligence analysis? Answer options included:
   1. Description is important, prediction is not
   2. Description is more important than prediction
   3. Description and prediction are equally important
   4. Prediction is more important than description
   5. Prediction is important, description is not

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# Annex B –Data Reduction Process

Table 4 shows how the issues and topics generated in Phase 1 (Focus Groups 1 and 2) were mapped into the broad categories and issues used during Phase 2.

**Table 4. Aggregation of issues generated during the Phase 1 into broad categories used during Phase 2**

| Broad category | Specific topic/issue | Issues identified in Focus Groups 1 and 2 (S1 and S2 respectively) |
|---|---|---|
| 1) Analyst recruitment, motivation and career path | 1.1 - Identifying analyst selection criteria and developing selection tools; | S2– Selection tools/job profiles |
| | 1.2 - Identifying drivers of analyst motivation for recruitment, retention, and career progression. | S1– Analyst incentives - Recruitment<br>S1– Analyst incentives - Retention<br>S1– Career paths<br>S1– Retention<br>S1– Analyst/manager progression<br>S2– Drivers of analyst motivation |
| 2) Analysis of tasks and competencies | 2.1 - Conducting task analysis for different roles (e.g., analyst, manager, collector); | S2– Task analysis for collectors<br>S2– Task analysis for analysts |
| | 2.2 - Identifying competencies for different roles and tasks (e.g., communication). | S1– Competencies for different roles<br>S1– Competencies for analysis<br>S1– Competencies for communication |
| 3) Performance Evaluation | 3.1 - Defining expectations of analysts' performance; | S2– Defining experience and expectations |
| | 3.2 - Developing objective evaluation methods of process and products; | S2– Objective evaluation of process/products |
| | 3.3 - Developing tools to support performance evaluation and audit trails. | S2– Tracking of actual performance after selection<br>S1– Tools to support audit trails<br>S2– Providing tools to support evaluation |
| 4) Mentoring and Feedback | 4.1 - Identifying effective methods for the mentoring of analysts; | S1– Mentoring |
| | 4.2 - Instilling openness and acceptance to feedback and criticism (and understanding the precursors of the lack of openness to feedback). | S1– Accepting feedback/criticism<br>S1– Openness to feedback/legitimacy of authority |
| 5) Producer/Consumer Relationship | 5.1 - Clarifying the optimal producer-consumer relationship (and the manager's role in this process); | S1– Optimal analyst/consumer relationship<br>S1– Producer vs. consumer<br>S1– Manager to clarify role of consumer<br>S1– Producer/consumer synergy |
| | 5.2 - Clarifying the analyst's | S1– Producer/consumer synergy |

| Broad category | Specific topic/issue | Issues identified in Focus Groups 1 and 2 (S1 and S2 respectively) |
|---|---|---|
| | role in understanding and defining product requirements; | S1– Understanding consumer requirements<br>S1– Driving consumer requirements |
| | 5.3 - Educating consumers about intelligence; | S1– Consumer education<br>S1– Educating consumers about intelligence |
| | 5.4 - Identifying how products impact decision-makers. | S2– Track usage of products<br>S1– Presentation of indications and warnings<br>S2– How IA impacts decision-making |
| 6) Analyst-Collector Understanding and Terms of Reference | | S1– Understanding consumer requirements<br>S1– Terms of reference – operator/analyst |
| 7) Collegial Collaboration | 7.1 - Determining effective structures for analytic teams; | S1– Best structure for analytic teams |
| | 7.2 - Instilling a collaborative spirit and promoting informal networks. | S1– Instill collaborative spirit<br>S1– Promoting informal networks |
| 8) Communication of Intelligence | 8.1 - Understanding and improving the communication of uncertainty | S1– Presentation of indications and warnings |
| | 8.2 - Utilizing information visualization techniques with consumers | S2– Information visualization techniques - consumers |
| | 8.3 - Impact of existing formats and varying communication of reports | S2– Impact of existing formats (e.g., layout)<br>S2– Impact of varying communication<br>S1– Format of reports |
| 9) Tools, Techniques and Practices (TTPs) | 9.1 - Documenting and evaluating current TTPs and developing new TTPs. | S2– Methodological approaches/techniques<br>S2– Evaluating methodologies<br>S2– New tools and techniques<br>S2– Information visualization techniques – Analysis<br>S2– Validating doctrine, policies, TTPs (human issues)<br>S2– Explore bottlenecks in policy/government systems |
| 10) Intelligence Community | 10.1 - Understanding constraints and barriers to knowledge use imposed by organizational structure | S1– Need for information sharing<br>S2– Develop information management TTPs<br>S1– Org structures present barriers to use of knowledge<br>S2– Identifying bottlenecks |
| | 10.2 - Better coordination, collaboration, and information sharing among agencies: | S1– Better coordination and focus<br>S1– Dialogue between academics & practitioners<br>S1– Divergent ethos/practice among orgs<br>S1– Need for information sharing |
| | 10.2.1 - Facilitating collaboration within the | S1– Effectiveness of varying entry paths |

| Broad category | Specific topic/issue | Issues identified in Focus Groups 1 and 2 (S1 and S2 respectively) |
|---|---|---|
| | community; | |
| | 10.2.2 - Developing a resource sharing mechanism; | S2– Resource sharing mechanism |
| | 10.2.3 - Developing standards for different information sources. | S2– Developing standards for different information sources |
| | 10.3 - Cross-organizational review of doctrine, tools, techniques and practices. | S1– Intra versus interagency collaboration<br>S1– Most effective structure/model<br>S2– Cross-org review – doctrine and TTPs |
| | 10.4 - Professionalization of intelligence analysis: | S1– Professionalization of field<br>S1– Common language for communication |
| | 10.4.1 - Developing common standards; | S1– Common standards<br>S1– Common standards |
| | 10.4.2 - Developing community-wide career path for analysts | S2– Identifying bottlenecks<br>S1– Effectiveness of varying entry paths<br>S2– Resource sharing mechanism |

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# Annex C – The original list of issues identified and rated by the Phase 1 participants

Table 5 shows the issues identified by the Phase 1 focus groups during the discussion of topics related to individual, group, organizational, and community levels. The table contains a brief description of how focus group members described the issue[2], and the mean importance of each issue (as rated on the 5-point scale). Participants identified a total of 44 issues when exploring the intelligence process at the hierarchical level, with ten issues at the individual level, six at the group level, 12 at the organizational level and 16 at the community level.

**Table 5. Issues generated at the hierarchical level of organization during the Phase 1 and their mean ratings**

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| Individual | Help consumers define requirements | Consumers do not know how to define exactly what they want | 1 | 4.7 |
| | Analyst/collector understanding | Analyst and collectors need to understand each other | 1 | 4.2 |
| | Analyst incentives - Recruitment | Understanding the motivation to be an analyst | 1 | 3.7 |
| | Analyst incentives - Retention | Understanding the motivation to remain an analyst | 1 | 4.2 |
| | Competencies for different roles | Competencies required to be an analyst, manager etc. | 1 | 3.8 |
| | Competencies for analysis | Identify the critical skills necessary for being an analyst | 2 | 3.7 |
| | Competencies for communication | Identify critical communication skills necessary for working in the intelligence community | 2 | 3.3 |
| | Instil collaborative spirit | Increase collaborative spirit at individual level | 2 | 3.6 |
| | Accepting feedback/criticism | Facilitate acceptance of feedback and criticism be improved | 2 | 3.1 |
| | Promoting informal networks | Identify ways to promote and support good informal networks | 2 | 3.3 |
| Group | Optimal analyst/consumer relationship | Understanding how to facilitate the most productive analyst/consumer relationship | 1 | 3.7 |
| | Producer vs. consumer | Producers and consumer relationship | 1 | 3.3 |
| | Best structure for analytic teams | Best structure of analytic teams (e.g., all one geographic area, etc.) | 1 | 4.2 |

[2]For full discussion of the topics that emerged in the focus groups, see qualitative results in Section 3.2.

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| | Manager to clarify role of consumer | What is the manager's role in interacting with the consumer? | 2 | 3.4 |
| | Mentoring | How can mentoring benefit the intelligence community? | 2 | 3.6 |
| | Openness to feedback/legitimacy of authority | How can openness to feedback and recognition of authority be increased? | 2 | 3.0 |
| Organization | Defining intelligence landscape in 2011 | How should/will intelligence analysis be defined in the future? | 1 | 4.2 |
| | Career paths | Lack of career paths for analysts was identified as a particular problem – not all analysts can be managers | 1 | 3.8 |
| | Divergent ethos/practice among organizations | Lack of consistency among different organizations and different cultures may hinder collaboration | 1 | 3.0 |
| | Impact of organizational structure | Organizational structure can impact on how intelligence analysis is produced | 1 | 4.0 |
| | Retention | How can analysts be retained over time? | 1 | 3.7 |
| | Analyst/manager progression | How do analysts progress to become managers? | 1 | 3.0 |
| | Format of reports | What format is best for intelligence reports? | 2 | 3.3 |
| | Producer/consumer synergy | How can producers and consumers work together better? | 2 | 3.7 |
| | Understanding consumer requirements | How can the requirements of consumers be better understand? | 2 | 4.3 |
| | Terms of reference – operator/analyst | Better clarity is required around the roles of operators and analysts | 2 | 3.6 |
| | Driving consumer requirements | Can consumer requirements be better guided and shaped by the IC? | 2 | 3.3 |
| | Organizational structures present barriers to use of knowledge | Can barriers resulting from organizational structure be overcome? | 2 | 3.4 |
| Community | Consumer education | How can consumers be educated to ask their questions more effectively and efficiently? | 1 | 4.3 |
| | Impact of turnover | How can negative impacts of turnover (particularly of analysts) be mitigated? | 1 | 4.0 |
| | Professionalization of field | How can intelligence analysis be professionalized? | 1 | 4.3 |
| | Better coordination and focus | Current problems are redundant efforts among organizations and disproportionate focus on less critical issues (e.g., in the media eye) | 1 | 4.3 |
| | Most effective structure/model | What is the most effective structure for an analytic team? | 1 | 3.8 |
| | Common language for communication | How can language become less idiosyncratic to each organizations | 1 | 3.8 |
| | Common standards | Common standards from organization to organization are required | 1 | 3.8 |
| | Effectiveness of varying entry paths | Do analysts that enter their profession from different paths perform equally well over time? | 1 | 2.5 |

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| | Career path | Analysts often have a very limited career path | 1 | 4.0 |
| | Tools to support audit trails | What tools would support the creation of clear audit trails? | 2 | 3.4 |
| | Common standards | Need common standards within and among IA organizations | 2 | 3.9 |
| | Dialogue between academics & practitioners | Academics and practitioners need to be able to talk to each other about intelligence | 2 | 3.0 |
| | Educating consumers about intelligence | How can consumers be better educated? | 2 | 4.1 |
| | Presentation of indications and warnings | Can indications and warnings be standardized to have more consistency across organizations? | 2 | 3.6 |
| | Intra vs. interagency collaboration | Need to have better collaboration at both levels | 2 | 3.7 |
| | Need for information sharing | How can information sharing be promoted? | 2 | 4.1 |

Table 5 shows that most of the topics listed while thinking about intelligence analysis from a hierarchical perspective were rated above the midpoint of the scale, ranging between quite valuable and very valuable. Helping consumers define their requirements (mean of 4.7) was rated the most valuable research priority of all the issues and topics, and research aimed at understanding the effectiveness of varying entry paths was given the lowest value with a mean of 2.5.

It is worth noting that participants identified a higher number of issues at the community level and rated their value the highest of all four levels. Organizational issues were rated as slightly less valuable than community issues, and individual and group level issues were rated the lowest. However, all issues identified were rated as being either quite valuable or very valuable to explore in future research.

Table 6 summarizes the issues raised in the "functions of science" session. For each issue, a description is provided along with the mean rating of importance.

**Table 6. Functional activity results from the Phase 1**

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| Documenting | Methodological approaches/techniques | Document what approaches and techniques are available to the analyst | 1 | 3.5 |
| | Track usage of products | Explore ways to track how much a product has been used (and by whom) | 1 | 3.7 |
| | Explore bottlenecks in policy/government system | Identify the current bottlenecks in policy/government systems that hinder analysis | 1 | 3.8 |
| | Cross-organizational review – doctrine and TTPs | Compare doctrine and TTPs across organizations in order to improve standardization | 2 | 3.6 |

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| | Task analysis for collectors | Conduct an analysis of the tasks required of collectors | 2 | 3.6 |
| | Task analysis for analysts | Conduct an analysis of the tasks required of collectors | 2 | 3.7 |
| | Identifying bottlenecks | Identify the current bottlenecks in the system that diminish effectiveness and efficiency | 2 | 3.6 |
| | Comparing concept vs. reality | Document the relationship between current doctrine and standards within the intelligence community | 2 | 3.7 |
| Evaluating | Evaluating methodologies | Evaluate whether tools and techniques available to the intelligence community work effectively | 1 | 4.0 |
| | Defining experience and expectations of analysts | Evaluate the necessary level of experience and expectations of analysts | 1 | 4.0 |
| | Impact of existing formats (e.g., layout) | Evaluate the impact of format – are some more effective than others, and for what type of audience | 1 | 3.7 |
| | Impact of varying communication | Evaluate what form of communication is most effective | 1 | 4.0 |
| | Objective evaluation of process/products | Enable objective evaluation of intelligence processes and products | 1 | 4.2 |
| | Tracking of actual performance after selection | Track and evaluate the performance (e.g., accuracy) of specific analysts over time | 1 | 3.5 |
| | Validating doctrine, policies, TTPs in relation to human issues | Compare the congruence between current doctrines/ practices and human capabilities and limitations | 2 | 3.9 |
| | How intelligence analysis impacts decision-making | Understand the impact of intelligence analysis on how people make decisions? | 2 | 4.0 |
| | Evaluating concept vs. reality | Evaluate how well current doctrine and standards are implemented within the community | 2 | 4.0 |
| | Drivers of analyst motivation | What motivates analysts to become/stay analysts | 2 | 3.7 |
| Developing | New tools and techniques | Develop new tools to support intelligence production | 1 | 4.0 |
| | Information visualization techniques - consumers | Develop information visualization techniques to facilitate communication with consumers | 1 | 4.0 |
| | Information visualization techniques - Analysis | Develop information visualization techniques to assist analysis | 1 | 4.0 |
| | Selection tools/job profiles | Develop selection tools and job profiles to promote better analyst | 1 | 3.8 |

| Level | Issue | Description of the issue by participants | FG | Mean rating |
|---|---|---|---|---|
| | | performance | | |
| | Facilitate coordination and communication in community | How can better coordination and communication be facilitated? | 2 | 3.9 |
| | Resource sharing mechanism | Can resources be better shared? | 2 | 4.0 |
| | Developing standards for different information sources | Are there common standards for what is expected of different information sources? | 2 | 3.6 |
| | Providing tools to support evaluation | Can tools be developed to support the empirical evaluation of intelligence process and products? | 2 | 3.9 |
| | Develop information management TTPs | Develop TTPs for how information is utilized | 2 | 3.6 |

Participants identified 26 issues related to functional activities, with eight involving documentation, ten related to evaluation processes, and nine related to development. Activities related to the evaluation of intelligence processes and products and development activities were rated slightly higher than documenting processes.


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CAPABILITY CHALLENGES IN THE HUMAN DOMAIN FOR INTELLIGENCE ANALYSIS: REPORT ON COMMUNITY-WIDE DISCUSSIONS WITH CANADIAN INTELLIGENCE PROFESSIONAL]

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Building on an earlier small-sample interview study (Derbentseva, McLellan, & Mandel, 2011), this report describes the findings of a focus group study with members of the Canadian intelligence community. The present study had both a larger and more diverse sample of intelligence practitioners than the earlier study. Four focus group discussions were conducted to explore human capability challenges within the broader Canadian community. The study also explored how behavioural science research might help the intelligence community deal with the identified challenges. Results showed a wide range of issues and challenges identified within the focus groups. Issues such as coordination and information sharing within the community, professionalization and the need for better career paths emerged as important challenges. Educating consumers about intelligence analysis, clarifying the relationship between consumers and producers of analytic products and research related to the tools, techniques and the practice of intelligence also received considerable attention. Overall, this study documents an expanded set of issues and challenges facing intelligence personnel, strong evidence of the potential contribution that future research can make to alleviating current challenges within the intelligence community, and a detailed list of potential research opportunities for behavioural science research (and other types of research) to support intelligence capability.

Fondé sur une étude antérieure d'un petit échantillonnage d'entrevues (Derbentseva, McLellan & Mandel, 2011), le présent compte rendu décrit les résultats obtenus d'une étude menée par un groupe de consultation avec des membres de la collectivité canadienne du renseignement. Cette étude renferme un échantillonnage plus important et plus varié de praticiens du renseignement que l'étude précédente. Quatre groupes de consultation ont discuté des problèmes de capacité humaine au sein de la collectivité canadienne dans son ensemble. L'étude a également analysé de quelle façon la recherche en science du comportement peut aider la collectivité du renseignement à aborder les problèmes identifiés. Les résultats ont montré une vaste gamme d'enjeux et de problèmes identifiés par les groupes de consultation. Des questions comme la coordination et le partage de l'information au sein de la collectivité, la professionnalisation et le besoin de meilleurs parcours professionnels sont apparues importantes. L'éducation des consommateurs sur l'analyse du renseignement, la clarification des rapports entre les consommateurs et les producteurs de produits analytiques ainsi que la recherche associée aux outils, aux techniques et à la pratique du renseignement ont également fait l'objet d'une attention particulière. Dans l'ensemble, cette étude porte sur un vaste ensemble d'enjeux et de problèmes auxquels le personnel du renseignement est confronté, sur une preuve solide de la contribution éventuelle que peut apporter la recherche future pour amoindrir les problèmes actuels au sein de la collectivité du renseignement et sur une liste détaillée des possibilités de recherche en science du comportement (et autres types de recherche) à l'appui de la capacité du renseignement.

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focus group study; Canadian Forces; intelligent analysis; behaviroural science research